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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,947

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EXAMINER

TISCHLER, FRANCES

ART UNIT

PAPER NUMBER

4171

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,947	Applicant(s) GOTZ ET AL.	
	Examiner Frances Tischler	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/2/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it exceeds 150 words by approximately 50 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claim 1 is objected to because of the following informalities: line 4 reads “comprising an poly(propylene oxide)”; an should be changed to a.
3. Claim 7 is objected to because of the following informalities: line 2 reads “obtainable by esterification” which should be replaced by “obtained by esterification”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claim 14 provides for the use of a block copolyetherester elastomer, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it

merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claim 14 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 4, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Regarding claim 4: A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by

the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 4 recites the broad recitation of less than 30 meq per kg, and the claim also recites less than 25 meq per kg which is the narrower statement of the range/limitation.

12. Claim 8 claims a copolyetherester wherein the alkylene diol is 1,4-butene diol. Butene is not an alkylene and applicant's specification claims butanediol/1,4-butylene diol.

13. Claim 9 claims a copolyetherester wherein the dicarboxylic acid or derivative thereof is butylene terephthalate. The recitation of butylene terephthalate causes confusion. Applicant claims dimethyl terephthalate in the specification, which is a dicarboxylic acid derivative.

Claim Rejections - 35 USC § 102/103

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1 – 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bonte et al (US 6,380,290).

Regarding claims 1, 3, and 4: Applicant claims a process for preparing a block copolyetherester elastomer comprising polyester blocks and poly(alkylene oxide) polyol blocks of:

- at least one aromatic dicarboxylic acid or ester derivative thereof,
- at least one alkylene diol,
- a poly(alkylene oxide) polyol, comprising a poly(propylene oxide) end-capped with ethylene oxide,
- an ethylene oxide content of 22 – 90%, and 30% to 70%, by weight relative to the total weight of the poly(alkylene oxide) polyol,
- an unsaturation of the poly(alkylene oxide) polyol, being the total content of vinyl and allyl groups, of less than 35, and less than 25, meq per Kg of the polyol.

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17. Bonte discloses (abstract, column 1, lines 55 to end, column 2, lines 7 – 10, claim 1) a polyetherester copolymer derived from:

- Terephthalic acid or naphthalene dicarboxylic acid or an ester thereof,
- Alkylene diol,
- Polypropylene oxide glycol which contains ethylene oxide end groups,
- optionally, branching agents, stabilizers and other additives,
- ratio between propylene oxide to ethylene oxide range from 20:1 to 1:6.

18. Bonte discloses the same components claimed by applicant, including ethylene oxide end groups. Bonte's ratio between the number of EO to PO can be up to 6:1, or up 85% ethylene oxide and as low as 1:20 or 4% ethylene oxide. Applicant claims 22% to 90%, and 30% to 70%, by weight of ethylene oxide. Upon conversion of number of molecular units to weight percent, Bonte's ratio reads on applicant's ratio.

19. Regarding claim 2: Applicant claims an Mn of 2500 – 5000 g/mol of the poly(alkylene oxide) polyol. Bonte discloses (column 2, lines 19 – 23) an Mn value of 300 – 4000 of the soft segment (i.e., the poly(alkylene oxide)polyol segment), which falls within applicant's range.

20. Regarding claim 5: Applicant claims the process according to claim 1 wherein the poly(ethylene oxide) polyol has:

- an ethylene oxide content of between 30 and 70% by weight,
- an unsaturation content of less than 25 meq per kg poly(ethylene oxide) polyol,

- Mn of between 2500 and 5000 g/mol.

Bonte's disclosure, discussed above, reads on applicant's polyol block, on the ethylene oxide content and the Mn values.

21. Bonte is silent on the unsaturation content of the polyol. However, in view of substantially identical process and substantially identical copolyetherester copolymers obtained from said process, the polyol would possess the claimed unsaturation content. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicant to show otherwise. *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

24. Claims 6 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonte et al (US 6,380,290).

25. Regarding claim 6: Applicant claims the process according to claim 1, wherein in the block copolyetherester:

- The ratio by weight of poly(ethylene oxide) polyol/aromatic dicarboxylic acid is between 60/40 and 90/10,
- The average degree of polymerization of the polyester block is 3.5,
- The block copolyetherester has an Mn of at least 25,000 g/mol.

26. Bonte discloses (column 2, lines 9 – 18, table 1) a block copolyetherester made of polyester blocks and poly(alkylene oxide) polyol blocks with a ratio between the soft segments and the hard segments falling within a range such that the Shore D hardness of the segmented polyetherester lies between 75 and 25, which reads on applicant's 60/40 to 90/10 ratio range.

27. Bonte is silent on the degree of polymerization and the Mn of the copolymer. The degree of polymerization and the Mn are determined by experimental conditions, such as purity of the reactants. By changing the experimental conditions one can control the degree of polymerization and the Mn. The case law has held that "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or

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workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d618, 195 USPQ 6 (CCPA 1977). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain the degree of polymerization and the Mn desired through routine optimization of the process and thereby obtain the invention.

28. Claims 7 - 13:

29. Regarding claims 7, 10 – 12: Applicant claims a copolyetherester obtained by:

- the esterification process of reacting aromatic dicarboxylic acid or ester derivative thereof, alkylene diol, poly(alkylene oxide) polyol comprising a poly(propylene oxide) end capped with ethylene oxide.
- Applicant further claims (in claims 7 and 10 – 12) limitations a – f of the copolyetherester, such as polyol content, degree of polymerization, Mn, unsaturation.

30. Bonte disclosure is discussed above.

31. Regarding claim 8: Applicant claims an alkylene diol. Alkylene diols do not include the claimed butene diol. Examiner assumes applicant meant to claim butane diol as the alkylene diol. Bonte also discloses (abstract, column 1, lines 55 - end, table 1, claim 1) an alkylene diol. Bonte uses PL 380, PL 580 and PL 720, which are products sold by DSM made of ethylene oxide-capped polypropylene oxide and

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polybutylene terephthalate. Polybutylene terephthalate is made from butane diol and terephthalic acid, reading on applicant's butane diol.

32. Regarding claim 9: Applicant claims an aromatic dicarboxylic acid or the ester forming derivative thereof, which is butylene terephthalate. Bonte discloses (abstract, column 1, lines 55 - end, table 1, claim 1) terephthalic acid or naphthalene dicarboxylic acid or ester thereof, corresponding to applicant's aromatic dicarboxylic acid. Butylene terephthalate is the product formed by reacting a diol with a terephthalate. Bonte discloses the use of polybutylene terephthalate.

33. Regarding claim 13: Applicant claims the addition of at least one additive. Similarly, Bonte discloses (abstract, column 1, lines 55 - end, column 2, lines 24 – 59, column 3, lines 7 – end, claim 1) the addition of branching agents, stabilizers and other additives.

34. Bonte is silent on limitations e and f. As discussed above, the degree of polymerization and the Mn are determined by experimental conditions, such as purity of the reactants. By changing the experimental conditions one can control the degree of polymerization and the Mn. The case law has held that “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d618,

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195 USPQ 6 (CCPA 1977). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain the degree of polymerization and the Mn desired through routine optimization of the process and thereby obtain the invention.

35. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonte et al (US 6,380,290) in view of Tieke, Bernd (US 5,122,303).

36. Applicant claims copolyetherester in elastic fiber or film.

37. Bonte's disclosure is discussed above. Bonte discloses (abstract, claim 9) an article of manufacture comprising the copolyetherester and discloses that said polymer is particularly suited for applications that need to withstand high temperatures.

38. Bonte, however, does not teach fibers or films.

39. Tieke discloses (abstract, column 1, lines 40 – 55, column 2, lines 28 – 34) a polyetherester copolymer prepared from:

- a dihydroxy terminated poly(oxyalkylene) from polyethylene glycol or polypropylene glycol or combination of both,
- an aromatic dicarboxylic acid or ester forming derivative thereof
- and an aromatic diol,
- The copolymer is used in films and coatings.

40. Tieke discloses a polyetherester that is substantially identical to Bonte. Thus, it would have been obvious to one of ordinary skill in the art to have made Tieke's films and coating using Bonte's polyetherester to achieve the same results, since both polyetheresters are comparable.

Examiner Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frances Tischler whose telephone number is (571)270-5458. The examiner can normally be reached on Monday-Friday 7:30AM - 5:00 PM; off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/
Primary Examiner, Art Unit 1796

Frances Tischler
Examiner
Art Unit 4171

/FT/